

ABSTRACT

- 5 A process for recovering fine coals and clarifying water for recycling features with three distinct mechanisms: hydrophobic extraction, electrolyte coagulation, and macromolecular flocculation, which if desired may be integrated into a single stage. The hydrophobic extraction is accomplished using oil to form a coal-in-oil mixture. The process water is clarified using a flocculants, more preferably a combination of coagulant and anionic flocculants. With a well
- 10 defined reagent addition scheme, this process allows a combustible recovery greater than 88% at an ash content less than 11%, while producing a clean water containing less than 20 ppm suspended solids from a tailing's stream. The coal-in-oil mixture may be used as a fuel for example in coal-firing boilers and power generators.

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